

# Java and the Internet: Bridges to Independence from Legacy Systems

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The fast-track approach to the development of the Vanderbilt University Medical Center (VUMC) Integrated Advanced Information Management System (IAIMS) uses a reference architecture<sup>1</sup> to define implementation strategies. Whenever possible, new components of the architecture are designed to fit in the long-term plan. However, given time constraints, users' pressure and the status of the system's infrastructure, it is often not acceptable to delay the implementation of an application until it meets all the requirements of the reference architecture. In such situations, modules serving as temporary place-holders, and *de facto* considered as legacy systems, are developed, enabling the application to function, but ready to be replaced when the infrastructure and/or the development resources permit improvements consistent with long term objectives.

With the consolidation of health care organizations and the establishment of networks of care providers, information technology is faced with the challenge of supporting applications on heterogeneous platforms, including different hardware, operating systems, and network protocols. Java and the Internet provide tools to address these challenges and have already been used successfully at VUMC to increase the access to the computerized patient record<sup>2</sup>.

WizOrder<sup>3</sup>, a care-provider order entry system, was developed early in the course of the IAIMS effort at VUMC, using the client-server model. The application servers and query agents comply with the specifications of the reference architecture. The client, however, does not: it not only provides the

graphical user interface using operating system dependent features, but also handles the communications with the legacy systems. This insulates the application servers, which represent most of the written code, from these architectural idiosyncrasies. As a result, the WizOrder client depends on the OS/2 operating system and is complex enough that it cannot be simply implemented as a Web-based application.

The goal of this project is to produce a Web-based Java application as a client to WizOrder. The first step, currently under way and expected to be completed by June 97, is to separate the user interface from the communications module of the OS/2 client and translate the graphical user interface from C++ to Java. The communications module can then be moved away from the workstation, on an application server. The next step will mediate the interaction of these two components through a Web server (Fig. 1). At that point, the application will be accessible from a Web browser, subject to appropriate access control restrictions. The system is expected to be available by October 97.

## References

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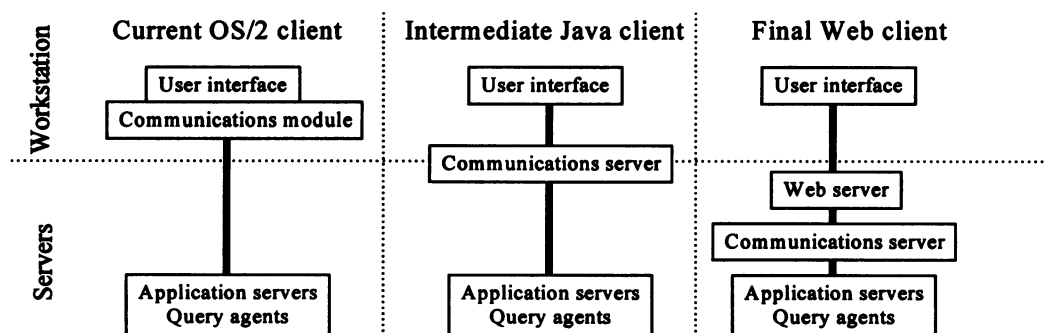


Figure 1. Strategy for converting the WizOrder client into a Web-based platform independent application